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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/811,835

03/30/2004

Kazuaki Goto

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07/24/2009

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EXAMINER

ROSSOSHEK, YELENA

ART UNIT

PAPER NUMBER

2825

MAIL DATE

DELIVERY MODE

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/811,835	<b>Applicant(s)</b> GOTO ET AL.	
	<b>Examiner</b> Helen Rossoshek	<b>Art Unit</b> 2825	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 03 May 2009.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) 6-9 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3, 10-13 is/are rejected.
- 7) ☒ Claim(s) 4, 5, 14 and 15 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

### **DETAILED ACTION**

1. This office action is in response to the Application 10/811,835 filed 03/30/2004 and Appeal Brief filed 05/03/2009.

2. Claims 1-15 remain pending in the Application. It has to be noted that Claims Appendix in a section VIII of the instant Appeal Brief lists claims in improper format. All originally filed claims should be listed with a proper identifier next to each claim reflecting a status of claim at the time the document was filed. Therefore Examiner considers for Examination claims 1-5 and 10-15 in this office action.

3. In view of the Amended Appeal Brief filed on 05/03/2009, PROSECUTION IS HEREBY REOPENED. Rejection set forth below.

To avoid abandonment of the application, appellant must exercise one of the following two options:

(1) file a reply under 37 CFR 1.111 (if this Office action is non-final) or a reply under 37 CFR 1.113 (if this Office action is final); or,

(2) initiate a new appeal by filing a notice of appeal under 37 CFR 41.31 followed by an appeal brief under 37 CFR 41.37. The previously paid notice of appeal fee and appeal brief fee can be applied to the new appeal. If, however, the appeal fees set forth in 37 CFR 41.20 have been increased since they were previously paid, then appellant must pay the difference between the increased fees and the amount previously paid.

### ***Claim Rejections - 35 USC § 112***

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 1-5, 10-15 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

While the limitation of claims 1 and 10 recites “providing a spare underground cell having no interconnect patterns and contacts”. However, the Specification discloses description of Figure 2, which demonstrates aforementioned limitations, recites “Vdd supply conductive pattern 18 and the Vss supply conductive pattern 20...” (¶ [0022] of the Application Publication 20050229133 for instant Application). In circuit design, “interconnect patterns” and “conductive patterns” are meant to function the same, in which they provide electrical connection between two elements. These claims now call for “no interconnect”, but yet the spare cell clearly has electrical connections 18 and 20, therefore, it appears that this claimed limitation is contradicting the disclosure.

### ***Claim Rejections - 35 USC § 101***

6. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

7. Claims 1-5, 10-15 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

The claims must have either a) physical transformation and/or b) to be tied to another statutory class (a particular machine or apparatus). In re Bilski, F.3d (Fed. Cir. 2008). The claims fail to include transformation from one physical state to another and/or to be tied to another statutory class. Although, the claims appear useful and

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concrete, there does not appear a) or b) in claims. Merely designing a logic function...; designing a pattern layout...; providing a spare underground cell...; inserting the spare underground cell into the open area...; designing a mask layout... would not appear to be sufficient to constitute a) physical transformation and/or b) to be tied to another statutory class. As such, the subject matter of the claims 1-5, 10-15 is not patent eligible.

***Claim Rejections - 35 USC § 102***

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

9. Claims 1, 2, 10, 11, 12 are rejected under 35 U.S.C. 102(b) as being anticipated by Dillon (US Patent 6,093,214).

With respect to claim 1 Dillon teaches a method of designing a circuit layout of a semiconductor integrated circuit (abstract), comprising:

designing a logic function of the integrated circuit (col. 1, ll.13-17);

designing a pattern layout of the integrated circuit so that the pattern layout includes a logic cell area and an open area (within inserting a standard cells as shown on the Fig. 2, wherein standard cells are functionally committed and determine functionality of the design integrated circuit (col. 3, ll.20-26));

providing a spare underground cell having no interconnect patterns and contacts (within base cells 70 shown on the Fig. 3, wherein base cell 70 includes no conductive segments/interconnect patterns or contacts (col. 4, ll.9-11; ll.28-34));

inserting the spare underground cell into the open area, wherein the spare underground cell includes a functional element (within inserting base cells 70 into the circuit design layout into unused/open area in the circuit design layout (col. 7, ll.9-12), wherein base cell 70 comprises plurality of functional elements/transistors (col. 4, ll.9-14)); and

designing a mask layout of the integrated circuit, the mask layout including the logic cell and the spare underground cell (col. 6, ll.20-23).

With respect to claim 10 Dillon teaches limitations similar to the limitations of the claim 1 including plurality of logic cells and plurality of spare underground cells in the integrated circuit layout design (col. 3, ll.44-49).

With respect to claims 2-5, 11-15 Dillon teaches:

Claims 2, 11: wherein the functional element includes a D flip-flop, an inverter, a NOR circuit, a NAND circuit an exclusive OR circuit and a latch circuit (col. 4, ll.1-8);

Claim 12: wherein each of the spare underground cells has a same kind of the functional elements (col. 3, ll.44-52).

### ***Claim Rejections - 35 USC § 103***

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

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invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claims 3, 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dillon as applied to claims 1 and 10 above, and further in view of Solomon et al. (US Patent 6,446,248).

With respect to claims 3 and 13 Dillon teaches limitations from which claims 3 and 13 depend. However Dillon lacks specifics regarding: dividing the pattern layout into plurality of block regions; searching the open area, distributing the open area into the block regions. Solomon et al. teaches:

Claims 3, 13: wherein inserting the spare underground cell includes:

dividing the pattern layout into a plurality of block regions (within partitioning the layout of the integrated circuit into blocks as shown on the Fig. 4 (col. 2, ll.50-51);

searching the open area from the block regions by searching and extracting empty spaces, i.e. unused by standard cells (col. 4, ll.23-24));

distributing the open area into the block regions (col. 7, ll.21-22); and

inserting the spare underground cell into the distributed open area (using area-based placement routing tool for placing ponds of gates (POGs) 411-416 as shown on the Fig. 4A (col. 7, ll.25-26), wherein POGs are sets of base cells (spare) (col. 7, ll.28-29)). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have used Solomon et al. to teach specific subject matter Dillon does not teach, because it provides a flexible set of revision cells which are not limited to cells chosen at layout time and no constrained to typical cell dimension is needed (col. 4, ll.11-13).

***Allowable Subject Matter***

12. Claims 4, 5, 14 and 15 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The prior art of record does not teach setting a flag when all inserting within the attended block region are finished in combination with all limitations of the claims 4 and 14 and claims 1 and 10, from which they depend, and after claims 1 and 10 are amended to overcome rejections under 35 USC § 112 and 35 USC § 101.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Helen Rossoshek whose telephone number is (571)272-1905. The examiner can normally be reached on 7:30-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jack Chiang can be reached on 571-272-7483. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

HR  
07/21/2009

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